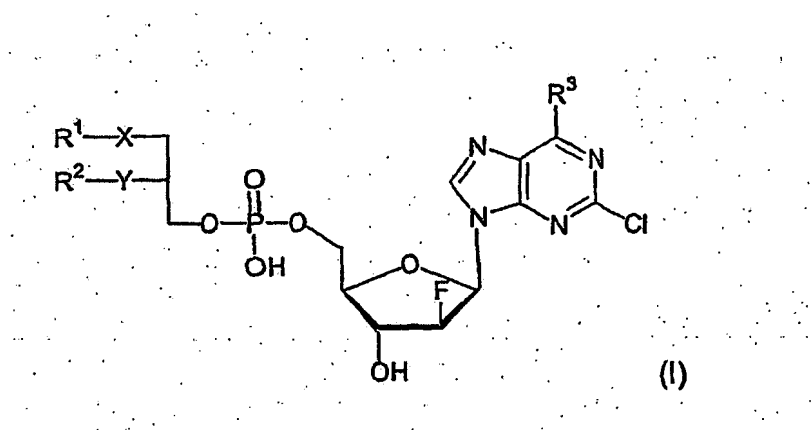


Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application. Material added is indicated by underlining and material deleted is indicated by ~~strikeout~~.

Listing of Claims:

1. (Currently Amended) A nucleotide derivative of formula 1



wherein

~~R¹ is selected from the group consisting of~~ a straight-chain or branched, saturated or unsaturated alkyl chain having 1-20 carbon atoms, which is unsubstituted or substituted at least once by halogen, C₁-C₆ alkoxy, C₁-C₆ alkylmercapto, C₁-C₆ alkoxycarbonyl, C₁-C₆ alkylsulfinyl or C₁-C₆ alkylsulfonyl groups;

~~R² is selected from the group consisting of~~ hydrogen, a straight-chain or branched, saturated or unsaturated alkyl chain having 1-20 carbon atoms, which is unsubstituted or substituted at least once by halogen, C₁-C₆ alkoxy,

~~C1-C6~~ C1-C6 alkylmercapto, C₁-C₆ alkoxy carbonyl or C₁-C₆ alkylsulfonyl groups;

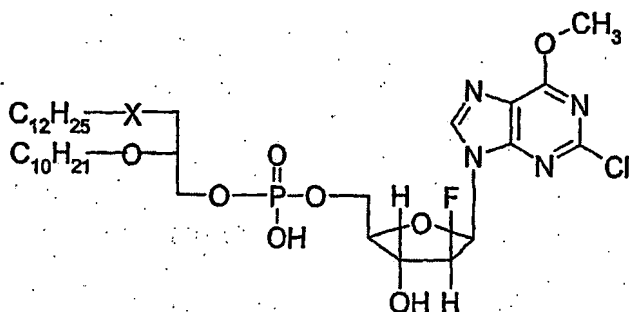
R³ is amino or OR⁴, wherein R⁴ is C₁-C₈ alkyl;

X is selected from the group consisting of a sulfur atom, a sulfinyl group and a sulfonyl group;

Y is oxygen;

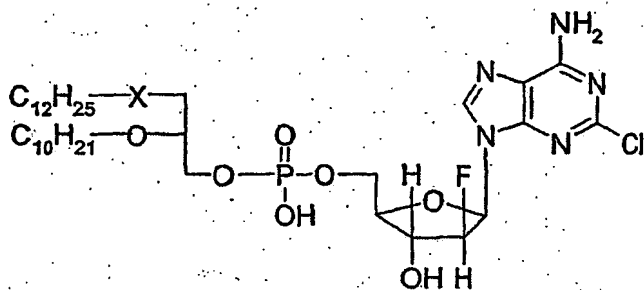
whereby when R³ is amino, said amino group may be unsubstituted or substituted by a known amino protecting group, their tautomers, their optically active forms and racemic mixtures, and their physiologically acceptable salts of inorganic and organic acids or bases.

2. (Currently Amended) The nucleotide derivative according to claim 1, wherein R¹ is a straight-chain ~~C8-C15~~ C8-C15 alkyl group, which is unsubstituted or substituted by a C₁-C₆ alkoxy or a C₁-C₆ alkylmercapto group.
3. (Currently Amended) The nucleotide derivative according to claim 1, wherein R² represents a straight-chain ~~C8-C45~~ C8-C15 alkyl group, which is unsubstituted or substituted by a C₁-C₆ alkoxy or a C₁-C₆ alkylmercapto group.
4. (Previously Presented) The nucleotide derivative according to claims 1, wherein R³ is OCH₃.
5. (Previously Presented) The nucleotide derivative according to claim 1, wherein the compound is:



wherein X is sulfur, sulfinyl or sulfonyl.

6. (Previously Presented) The nucleotide derivative according to claim 1, wherein R³ is NH₂.
7. (Previously Presented) The nucleotide derivative according to claim 1, wherein the compound is

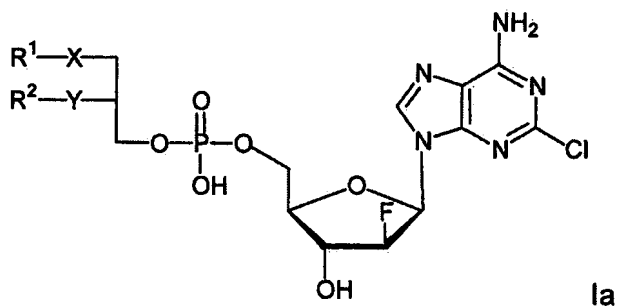


wherein X is sulfur, sulfinyl or sulfonyl.

8. (Currently Amended) A pharmaceutical composition comprising a ~~at least one~~ compound according to claim 1 in combination with a pharmaceutically acceptable adjuvant or vehicle.
9. (Previously Presented) A method for treating malignant tumors comprising administering to a patient in need of such treatment an amount of a compound

according to claim 1 effective to treat said tumors.

10. (Original) The method according to claim 9, wherein said tumor is selected from the group consisting of carcinomas, sarcomas or leukemias.
11. (Original) A method for treating malignant tumors comprising administering to a patient in need of such treatment an amount of the composition according to claim 8 effective to treat said tumors in fixed or free combination with other anticancer agents.
12. (Currently Amended) A method of synthesis of compounds of the formula Ia:



wherein R^1 is a straight-chain or branched, saturated or unsaturated alkyl residue having 1-20 carbon atoms, optionally mono- or polysubstituted by halogen, C_1 - C_6 alkoxy, C_1 - C_6 alkylmercapto, C_1 - C_6 alkoxycarbonyl, C_1 - C_6 alkylsulfinyl or C_1 - C_6 alkylsulfonyl groups;

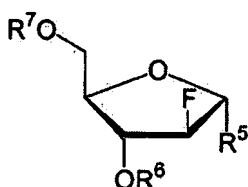
R^2 is hydrogen, a straight-chain or branched, saturated or unsaturated alkyl chain having 1-20 carbon atoms, optionally mono- or polysubstituted by halogen, C_1 - C_6 alkoxy, C_1 - C_6 alkylmercapto, C_1 - C_6 alkoxycarbonyl or C_1 - C_6 alkylsulfonyl groups;

X is selected from the group consisting of a sulfur atom, a sulfinyl group and a sulfonyl group;

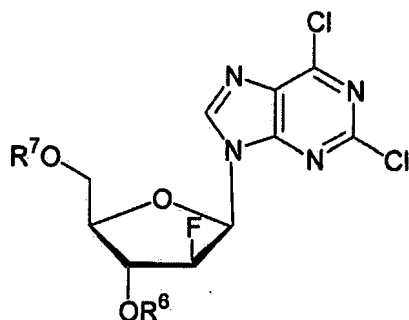
Y is oxygen;

comprising:

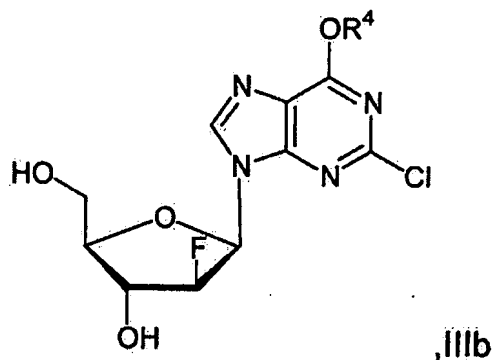
(a) reacting 2,6-dichloroadenine with an arabinofuranosyl derivative of the formula:



wherein R^5 is bromo or chloro and R^6 and R^7 are ~~protecting groups~~
independently acetyl or benzoyl, in the presence of ~~a hindered potassium base a~~
base which is potassium t-butoxide or potassium t-amylate and a solvent to form
the dichloropurine nucleoside derivative:

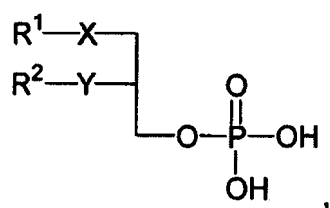


(b) subjecting said dichloro purine nucleoside derivative to basic conditions with an alkaline hydroxide and R⁴OH as solvent to provide for both deprotection and an aromatic nucleophilic substitution reaction to provide the 6-alkoxy-2-chloro purine nucleoside derivative of general formula IIIb:

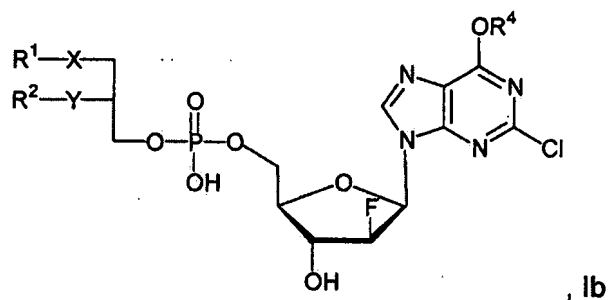


wherein R⁴ is C₁-C₈ alkyl;

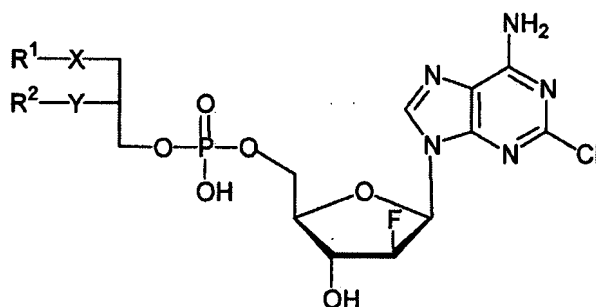
(c) reacting in an inert solvent said ~~6-alkoxy-2-chloro~~ 6-alkoxy-2-chloro purine nucleoside derivative with ~~an activated form of the compound:~~



which is activated by reaction with 2,4,6-triisopropyl-benzene sulfonic chloride ~~in an inert solvent~~ to provide the conjugated 6-alkoxy-2-chloro purine nucleotide derivative of general formula 1b:



(d) subjecting said conjugated 6-alkoxy-2-chloro purine nucleotide derivative to a solution of ammonia, which provides conditions that provide ~~for aminolysis,~~ to prepare the conjugated 2-chloroadenine 2-chloroadenine derivative:



13. (Withdrawn) The method of claim 12 wherein, said hindered potassium base is potassium t-butoxide or potassium ~~f-amylate~~ t-amylate.
14. (Currently Amended) The method of claim 12, wherein said solvent for reacting said 2,6-dichloroadenine and said arabinofuranosyl derivative is a mixture of acetonitrile, ~~f-butanol~~ t-butanol and 1,2-dichloroethane.
15. (Original) The method of claim 12, wherein R⁴ is methyl.
16. (Original) The method of claim 12, wherein R⁵ is bromo.
17. (Currently Amended) The method of claim 12, wherein R⁶ and R⁷ are ~~independently acetyl or benzoyl~~.
18. (Original) The method of claim 12, wherein R¹ and R² are individually a straight-chain C₈-C₁₅ alkyl group, which is unsubstituted or substituted by a C₁-C₆ alkoxy or a C₁-C₆ alkylmercapto group.
19. (Original) The method of claim 12, wherein R¹ is C₁₂H₂₅ and R² is C₁₀H₂₁.

20. (New) The method of claim 12, wherein the alkaline hydroxide is sodium hydroxide.